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## PRIMER COMPOSITION

Patent Number: JP53000232  
Publication date: 1978-01-05  
Inventor(s): IMAI TAKESHI; others: 01  
Applicant(s): TORAY SILICONE CO LTD  
Requested Patent: JP53000232  
Application Number: JP19760073273 19760623  
Priority Number(s):  
IPC Classification: C09D3/82 ; C09J3/16  
EC Classification:  
Equivalents: JP1048616C, JP55027118B

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### Abstract

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PURPOSE: The primer composition comprises a cold-curable, condensation silicone elastomer and a mercapto-substd. trialkylsilane that improves adhesion to metals and gives excellent corrosion resistance to the metal surface.

Data supplied from the esp@cenet database - I2

Search Result

Rank(R) 1 of 1

Database  
JAPIO

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MULTI-PURPOSE ROOF INCORPORATING THEREIN AIR PASSAGES

PUB. NO.: 54-093823

[JP 54093823]

A]

PUBLISHED: July 25, 1979 (19790725)

INVENTOR(s): HACHISU TAKESHI

SASAKI TOSHIMI

APPLICANT(s): HITACHI LTD [000510] (A Japanese Company or Corporation), JP (Japan)

APPL. NO.: 53-000232

[JP 78232]

FILED: January 06, 1978 (19780106)

INTL CLASS:

[2]

E04H-009/16

JAPIO CLASS: 27.2 (CONSTRUCTION -- Building); 35.1 (NEW ENERGY SOURCES -- Solar Heat); 35.8 (NEW ENERGY SOURCES -- Conservation)

JOURNAL: Section: M, Section No. 75, Vol. 03, No. 120, Pg. 8, October 09, 1979 (19791009)

#### ABSTRACT

PURPOSE: To provide a multi-puropose roof, which can be used in winter as heating system by the use of solar heat and is capable of melting snow accumulated on the roof with no need of any special snow removing jobs, and in summer, can be used as cooling system.

CONSTITUTION: On the inside of roof, air passages 6 are formed by applying a thin plate 1 over the upper surface of W-shaped roof elements 3. In winter, hot air 14, 21 is circulated in the passages 6 to heat the boundary surface between the roof and snow accumulated thereon and thus to melt away the snow. If necessary, it is possible to divide the air passages 6 into two parts, i.e., inclined south roof section 7 and inclined north roof section 8, so as to use the south roof section 7 as solar-heat receiving plate. Further, it is also possible to introduce open air into the air passages 6, so as to release a portion of hot air heated by solar heat to the outside of the system.

END OF DOCUMENT

L3 ANSWER 1 OF 2 CA COPYRIGHT 1997 ACS  
AN 123:11277 CA  
TI Compositions for bonding fluororubbers to metals  
IN Nakazawa, Akiko; Kaneko, Takeo  
PA Asahi Glass Co Ltd, Japan  
SO Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
PI JP ██████████ 941004 Heisei  
AI JP 93-107776 930409  
PRAI JP 93-34128 930129  
JP 93-34130 930129  
DT Patent  
LA Japanese  
IC ICM C09D183-00  
ICS C09J004-00; C09J005-00  
CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 39, 55, 56  
OS MARPAT 123:11277  
AB Compns. for providing heat- and oil-resistant joints between org. peroxide-vulcanizable fluororubbers and metals comprise (A) R<sub>1</sub>aSiR<sub>2</sub>bR34-a-b [R<sub>1</sub> = monovalent group contg. unsatd. C-C bond; R<sub>2</sub> = (substituted) monovalent group; R<sub>3</sub> = hydrolyzable group; a = 1-3; b = 0-2; a + b = 1-3] or its partial hydrolyzates, (B) .gtoreq.1 compd. selected from silicate esters, their partial hydrolyzates, and [R<sub>4</sub>O(SiR<sub>5</sub>R<sub>6</sub>O)<sub>q</sub>]<sub>r</sub>SiR<sub>7</sub>pO(4-p-r)/2 [R<sub>4</sub>-7 = (substituted) monovalent group; p = 0-2; q .gtoreq.1; r = 0.5-4], and (C) titanate esters and/or Al alkoxides, and the compns. may addnl. contain (E) polyfunctional unsatd. compds. and/or org. peroxides, (E) fluororubbers, typically vinylidene fluoride copolymers, and (F) [H<sub>2</sub>N(CH<sub>2</sub>CH<sub>2</sub>NH)<sub>x</sub>R<sub>8</sub>]<sub>y</sub>SiR<sub>9</sub>zR104-y-z [R<sub>8</sub> = divalent hydrocarbyl; R<sub>9</sub> = (substituted) monovalent group; R<sub>10</sub> = hydrolyzable monovalent group; x = 0-4; y = 1-3; z = 0-2; y + z = 1-3] for further improvement of adhesion and heat and oil resistance. Thus, stainless steel (SUS 304) was coated with a toluene soln. of vinyltrimethoxysilane 15, (EtO)<sub>4</sub>Si 5, tetra(.beta.-methoxyethyl) silicate 5, and tetra-Bu titanate 5 parts, dried at 25.degree. for 1 h, and pressed to a fluororubber compd. contg. Aflas 150P, MT carbon black, triallyl isocyanurate, and Perhexa 2.5B at 170.degree. for 10 min to give a bonded specimen which showed cohesive failure of the fluororubber 80% initially, 60% after heating at 230.degree. for 70 h, and 40% after immersion in JIS No. 3 oil at 175.degree. for 70 h.  
ST vinylsilane adhesive fluororubber metal bonding; siloxane adhesive fluororubber metal bonding; silicate adhesive fluororubber metal bonding; titanate adhesive fluororubber metal bonding; aluminum alkoxide adhesive fluororubber bonding; heat resistance adhesive fluororubber bonding metal; oil resistance adhesive fluororubber bonding metal; steel fluororubber bonding adhesive; aminosilane adhesive fluororubber bonding metal; peroxide adhesive fluororubber bonding metal  
IT Adhesives  
Heat-resistant materials  
(adhesives for providing heat- and oil-resistant joints between fluororubbers and metals)  
IT Metals, miscellaneous  
RL: MSC (Miscellaneous)  
(adhesives for providing heat- and oil-resistant joints between fluororubbers and metals)  
IT Siloxanes and Silicones, uses

IT RL: TEM (Technical or engineered material use); USES ("es)  
(adhesives for providing heat- and oil-resistant joints between  
fluororubbers and metals)

IT Unsaturated compounds  
RL: TEM (Technical or engineered material use); USES (Uses)  
(polyfunctional; adhesives for providing heat- and oil-resistant  
joints between fluororubbers and metals)

IT Silanes  
RL: TEM (Technical or engineered material use); USES (Uses)  
(vinyl-contg.; adhesives for providing heat- and oil-resistant  
joints between fluororubbers and metals)

IT Silanes  
RL: TEM (Technical or engineered material use); USES (Uses)  
(amino, adhesives for providing heat- and oil-resistant joints  
between fluororubbers and metals)

IT Rubber, synthetic  
RL: MSC (Miscellaneous)  
(fluoro, adhesives for providing heat- and oil-resistant joints  
between fluororubbers and metals)

IT Chemically resistant materials  
(oil-resistant, adhesives for providing heat- and oil-resistant  
joints between fluororubbers and metals)

IT Peroxides, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(org., adhesives for providing heat- and oil-resistant joints  
between fluororubbers and metals)

IT Rubber, synthetic  
RL: MSC (Miscellaneous)  
(propene-tetrafluoroethylene, adhesives for providing heat- and  
oil-resistant joints between fluororubbers and metals)

IT 11109-50-5, SUS 304  
RL: MSC (Miscellaneous)  
(adhesives for providing heat- and oil-resistant joints between  
fluororubbers and metals)

IT 78-10-4, Tetraethyl orthosilicate 2157-45-1, Tetra(.beta.-  
methoxyethyl) orthosilicate 2551-83-9, Allyltrimethoxysilane  
2768-02-7, Vinyltrimethoxysilane 5593-70-4, Tetrabutyl titanate  
9016-00-6D, Dimethylsilanediol homopolymer, sru, ethoxy derivs.  
13963-57-0, Aluminum acetylacetone 19538-63-7,  
Diisopropyltitanium acetylacetone 31900-57-9D,  
Dimethylsilanediol homopolymer, ethoxy derivs. 118529-50-3  
RL: TEM (Technical or engineered material use); USES (Uses)  
(adhesives for providing heat- and oil-resistant joints between  
fluororubbers and metals)

IT 27029-05-6, Propene-tetrafluoroethylene copolymer  
RL: MSC (Miscellaneous)  
(rubber; adhesives for providing heat- and oil-resistant joints  
between fluororubbers and metals)

RN 11109-50-5

RN 78-10-4

RN 2157-45-1

RN 2551-83-9

RN 2768-02-7

RN 5593-70-4

RN 9016-00-6D

RN 13963-57-0

RN 19538-63-7

RN 31900-57-9D

RN 118529-50-3

RN 27029-05-6

L3 ANSWER 2 OF 2 WPIDS COPYRIGHT 1997 DERWENT INFORMATION LTD

AN 94-354929 [44] WPIDS

CR 94-354942 [44]

DNC C94-161944

TI Primer compsn. for improving adherence of fluorine rubber to e.g.

L6 ANSWER 1 OF 2 CA COPYRIGHT 1997 ACS  
AN 117:92390 CA  
TI Anticorrosive primer compositions for metals  
IN Hosokawa, Toshitsugu; Sato, Shigeki; Murakami, Kazuyoshi  
PA Nitto Denko K. K., Japan  
SO Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF  
PI JP ██████████ 920408 Heisei  
AI JP 90-225549 900827  
DT Patent  
LA Japanese  
IC ICM C09J005-02  
CC 42-10 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 39, 55  
AB Soln.-type title compns. for bonding rubber-based adhesive layers to metals, esp. useful for winding anticorrosive tapes on metal pipes, contain 5-30% rubber-type polymers and 0.5-20% coupling agents selected from SH-, vinyl-, or methacryloxy-contg. silanes and titanate chelates. Thus, Butyl 268 10, Escorez 1202 10, and carbon black 3 parts were kneaded and mixed with 1 part HS(CH<sub>2</sub>)<sub>3</sub>Si(OMe)<sub>3</sub> and 76 parts PhMe to give a primer compn. An iron sheet was coated with the compn., laminated with an anticorrosive tape comprising a polyethylene support and an adhesive layer contg. butyl rubber and ethylene-propene copolymer, and aged 10 days at 80.degree. to give 180.degree. peel strength 3.55, 2.85, and 2.75 kg/cm after 0, 500, and 1000 h in boiling water.  
ST anticorrosive primer rubber blend; metal adhesion rubber  
anticorrosive primer; water resistance primer rubber; iron pipe  
anticorrosive primer; coupling agent rubber primer; silane coupling rubber primer; titanate coupling rubber primer; pipe anticorrosive tape primer  
IT Silanes  
RL: USES (Uses)  
(coupling agents, anticorrosive primers contg., for tapes on metal pipes)  
IT Pipes and Tubes  
(metal, anticorrosive tape for, primers for)  
IT Rubber, butyl, uses  
RL: USES (Uses)  
(primers, Butyl 268, anticorrosive, for protective tape on metal pipe)  
IT Coupling agents  
(silanes and titanates, anticorrosive primers contg., for tapes on metal pipes)  
IT Adhesive tapes  
(anticorrosive, rubber-based, for protecting metal pipes, primers for)  
IT Coating materials  
(anticorrosive, primers, rubber, contg. coupling agents, for protective tape on metal pipe)  
IT 7439-89-6, Iron, miscellaneous  
RL: MSC (Miscellaneous)  
(bonding of, to anticorrosive adhesive tapes, primers for)  
IT 2530-85-0, 3-Methacryloxypropyltrimethoxysilane 2768-02-7,  
Vinyltrimethoxysilane 4420-74-0, 3-Mercaptopropyltrimethoxysilane  
66625-70-5  
RL: USES (Uses)  
(coupling agents, in anticorrosive primers for bonding rubbers to

metals)  
IT 9010-85-9  
RL: USES (Uses)  
(rubber primers, Butyl 268, anticorrosive, for protective tape  
on metal pipe)

RN 7439-89-6  
RN 2530-85-0  
RN 2768-02-7  
RN 4420-74-0  
RN 66625-70-5  
RN 9010-85-9

L6 ANSWER 2 OF 2 WPIDS COPYRIGHT 1997 DERWENT INFORMATION LTD  
AN 92-170718 [21] WPIDS  
DNC C92-078482

TI Anticorrosive primer compsn. for coating metal surface - comprises  
soln. of rubber polymer and silane coupling agent contg. mercapto,  
vinyl and/or methacryloxy in mol..  
DC A18 A82 G02 M14  
PA (NITL) NITTO DENKO CORP  
CYC 1  
PI JP 04106174 A 920408 (9221)\* 5 pp <--  
ADT JP 04106174 A JP 90-225549 900827  
PRAI JP 90-225549 900827  
IC C09J005-02  
AB JP04106174 A UPAB: 931006  
The compsn. to be used for adhering a pressure sensitive adhesive  
comprising mainly rubbery polymer to a metallic surface comprises a  
soln. comprising a rubbery polymer and a silane type coupling agent  
contg. at least one of mercapto, vinyl and methacryloxy in the  
molecule or a chelated titanate type coupling agent as the necessary  
component, wherein 5-30 wt. % of the rubbery polymer and 0.5-20 wt.  
% of the coupling agent are contained in 100 wt % of the soln.  
USE/ADVANTAGE - The primer exhibits a good adhesion to both a  
metal surface and a pressure sensitive adhesive. The primer is used  
for coating on a metal surface and thereon an anticorrosive tape is  
adhered to make effective anticorrosive treatment of metallic  
articles such as pipes for transporting high temp. fluid. (0/0)  
O/O  
FS CPI  
FA AB  
MC CPI: A08-M01; A12-A01; A12-A05; G02-A05E; G03-B03; G03-B04; M14-K

L18 ANSWER 1 OF 2 CA COPYRIGHT 1997 ACS  
AN 109:65377 CA  
TI Method for forming copper-clad aluminum boards  
IN Kaiya, Masami; Yokota, Mitsuo; Iijima, Toshiyuki  
PA Hitachi Chemical Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
PI ~~JP 62016707 A2~~ 870924 Showa  
AI JP 86-61575 860319  
DT Patent  
LA Japanese  
IC ICM B29C065-02  
ICA B32B015-08; C08J005-12  
ICI B29L009-00  
CC 76-2 (Electric Phenomena)  
AB The method involves etching the Al board with a Cl--contg. acid soln. to make its surface rough, applying a coupling agent on the surface, placing a plastic insulator film and a Cu foil on the board, and hot-pressing the laminate. Preferably, the plastic is polyethylene, crosslinking polyethylene, or polymethylpentane, and the coupling agent is an aminosilane, vinylsilane, methacryloxy silane, titanate, or zircoaluminate. The laminate board has stronger adhesion between the Al board, plastic film, and Cu foil.  
ST aluminum board copper cladding; laminate board aluminum copper; ethylene poly insulation laminate circuit board; methylpentane poly insulation circuit board; aminosilane coupling agent; vinylsilane coupling agent; methacryloxy silane coupling agent; titanate coupling agent; zircoaluminate coupling agent  
IT Titanates  
RL: USES (Uses)  
(coupling agents, for aluminum and plastic films of elec. circuit boards)  
IT Electric circuits  
(printed, boards, copper-clad aluminum, prepn. of)  
IT 7440-50-8, properties  
RL: PRP (Properties)  
(copper foil, laminate circuit boards from aluminum and)  
IT 919-30-2, KBM-903 2768-02-7 115426-46-5  
RL: USES (Uses)  
(coupling agent, in formation of elec. circuit boards form aluminum and plastic film)  
IT 7429-90-5, Aluminum, uses and miscellaneous  
RL: TEM (Technical or engineered material use); USES (Uses)  
(films, laminate circuit boards from copper foil and)  
IT 25068-26-2  
RL: TEM (Technical or engineered material use); USES (Uses)  
(insulator films, for aluminum-copper laminate circuit boards)  
RN 7440-50-8  
RN 919-30-2  
RN 2768-02-7  
RN 115426-46-5  
RN 7429-90-5  
RN 25068-26-2

L18 ANSWER 2 OF 2 WPIDS COPYRIGHT 1997 DERWENT INFORMATION LTD  
AN 87-309452 [44] WPIDS  
DNN N87-231400 DNC C87-131701

TI Prodn. of aluminium core copper clad laminate - by etching, applying coupling agent, overlaying and heat-pressing, useful for electronic circuit substrate.

DC A18 A85 L02 P73

PA (HITB) HITACHI CHEM CO LTD

CYC 1

PI JP 62216727 A 870924 (8744)\* 4 pp <--

ADT JP 62216727 A JP 86-61575 860319

PRAI JP 86-61575 860319

IC B29C065-02; B29L009-00; B32B015-08; C08J005-12

AB JP62216727 A UPAB: 930922

Prodn. involves etching the surface of an Al sheet with a Cl(-) contg. acidic aq. soln. for surface-roughening, applying a coupling agent to the surface, overlaying a resin and a Cu foil (1), and heat-pressing.

The resin is pref. polyethylene, crosslinked polyethylene or polymethylpentene. The coupling agent is a type of aminosilane, vinylsilane, methacryloxsilane, titanate or zircoaluminate.

ADVANTAGE - The laminate has high bonding strength between the Al core and the Cu clad, and a low dielectric loss. Double-sided copper clad laminates can be realised.

1/1

FS CPI GMPI

FA AB

MC CPI: A11-B09A2; A12-E07A; L03-H04E1

L19 ANSWER 1 OF 1 HCA COPYRIGHT 1997 ACS  
AN 94:156998 HCA  
TI Alcoholysis of chlorosilanes and the synthesis of silane coupling agents  
AU Wu, Guan-Li; Wang, Duo-Yuan; Dai, Dao-Rong; Xie, Zu-Shou; Sun, Hong;  
Wu, Ye-Xin  
CS Inst. Chem., Acad. Sin., Peking, Peop. Rep. China  
SO Hua Hsueh Hsueh Pao (1980), 38(5), 484-8  
CODEN: HHHPA4; ISSN: 0567-7351  
DT Journal  
LA Chinese  
CC 29-6 (Organometallic and Organometalloidal Compounds)  
AB Alcoholysis of  $\text{RSiCl}_3$  with  $\text{R}_1\text{OH}$  gave 91-98%  $\text{RSi}(\text{OR}_1)_3$  ( $\text{R} = \text{ClCH}_2\text{CH}_2\text{CH}_2$ ,  $\text{CH}_2:\text{CH}$ , Me, Ph;  $\text{R}_1 = \text{Me}$ , Et). Treating  $\text{Cl}(\text{CH}_2)_3\text{Si}(\text{OMe})_3$  with  $(\text{H}_2\text{N})_2\text{CS}$  followed by basic hydrolysis gave  $\text{HS}(\text{CH}_2)_3\text{Si}(\text{OMe})_3$  which is useful as a protective coating for metal surfaces.  $\text{HSi(OEt)}_3$  adds to  $\text{CH}_2:\text{CHCH}_2\text{NH}_2$  in the presence of  $\text{H}_2\text{PtCl}_6$  to give  $(\text{EtO})_3\text{Si}(\text{CH}_2)_3\text{NH}_2$ . Chlorinating  $\text{PhSiCl}_3$  gave  $p\text{-ClC}_6\text{H}_4\text{SiCl}_3$  which with  $\text{R}_2\text{OH}$  gave 74-89%  $p\text{-ClC}_6\text{H}_4\text{Si}(\text{OR}_2)_3$  ( $\text{R}_2 = \text{Me}$ , Et, Pr,  $\text{Me}_2\text{CH}$ , Bu).  
ST alkoxy silane; silane alkoxy; chlorosilane alcoholysis; metal protective coating mercaptopropylsilane; aminopropylsilane; chlorophenylsilane alkoxy; coupling agent silane  
IT Alcoholysis  
(of chlorosilanes)  
IT 2487-90-3  
RL: RCT (Reactant)  
(addn. reaction of, with allyl amine)  
IT 107-11-9  
RL: RCT (Reactant)  
(addn. reaction of, with triethoxysilane)  
IT 64-17-5, reactions 67-56-1, reactions  
RL: RCT (Reactant)  
(alcoholysis by, of chlorosilanes)  
IT 67-63-0, reactions 71-23-8, reactions 71-36-3, reactions  
RL: RCT (Reactant)  
(alcoholysis by, of trichloro(chlorophenyl)silane)  
IT 75-77-4, reactions 75-78-5 75-94-5 98-13-5 2550-06-3  
RL: RCT (Reactant)  
(alcoholysis of)  
IT 825-94-5P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and alcoholysis of)  
IT 4420-74-0P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and use as protective coating for metal surfaces)  
IT 78-08-0P 78-62-6P 780-69-8P 919-30-2P 1185-55-3P  
2031-67-6P 2530-87-2P 2768-02-7P 2996-92-1P 5089-70-3P  
21700-74-3P 35692-30-9P 77023-44-0P 77023-45-1P 77023-46-2P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)  
IT 62-56-6, reactions  
RL: RCT (Reactant)  
(reaction of, with (chloropropyl)trimethoxysilane)  
RN 2487-90-3  
RN 107-11-9  
RN 64-17-5  
RN 67-56-1

RN 67-63-0  
RN 71-23-8  
RN 71-36-3  
RN 75-77-4  
RN 75-78-5  
RN 75-94-5  
RN 98-13-5  
RN 2550-06-3  
RN 825-94-5P  
RN 4420-74-0P  
RN 78-08-0P  
RN 78-62-6P  
RN 780-69-8P  
RN 919-30-2P  
RN 1185-55-3P  
RN 2031-67-6P  
RN 2530-87-2P  
RN 2768-02-7P  
RN 2996-92-1P  
RN 5089-70-3P  
RN 21700-74-3P  
RN 35692-30-9P  
RN 77023-44-0P  
RN 77023-45-1P  
RN 77023-46-2P  
RN 62-56-6

L10 ANSWER 1 OF 2 CA COPYRIGHT 1997 ACS  
AN 117:9993 CA  
TI Siloxane compositions for zinc-rich paint binders  
IN Mizohata, Koji; Tanaka, Masatoshi  
PA Nippon Paint K. K., Japan  
SO Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF  
PI JP 040-12 920217 Heisei  
AI JP 90-158109 900615  
DT Patent  
LA Japanese  
IC ICM C08G077-20  
ICA C09D005-10  
CC 42-10 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 35  
OS MARPAT 117:9993  
AB Title compns., forming films with good adhesion and receptivity of other coatings, comprise simultaneously or sep. acid-hydrolyzed mixts. of 100 parts (R1O)4Si (R1 = C1-5 alkyl) and/or its condensation products and 5-300 parts (R1O)3SiR2 (R2 = C2-5 unsatd. hydrocarbyl). Thus, an iso-PrOH soln. of 100 parts (EtO)4Si and 20 parts vinyltrimethoxysilane was heated with 21 parts 0.01N HCl at 60.degree. to give a hydrolyzate, 80 parts of which was mixed with 15 parts powd. Zn and 5 parts clay to give a Zn-rich paint. A sandblasted steel sheet was coated with the paint with good adhesion and receptivity of a com. chlorinated rubber- or epoxy resin-based primer.  
ST siloxane binder zinc rich paint; acid hydrolysis alkyl silicate; trialkoxysilane unsatd hydrocarbyl acid hydrolysis  
IT Coating materials  
(zinc-rich, binders for, mixed hydrolyzates of tetraalkoxysilanes and unsatd. hydrocarbon group-contg. trialkoxysilanes as)  
IT 93830-52-5D, hydrolyzates  
RL: USES (Uses)  
(blends with alkyl silicate hydrolyzates, binders for zinc-rich paints)  
IT 2550-04-1D, Allyltriethoxysilane, hydrolyzates 2768-02-7D,  
Vinyltrimethoxysilane, hydrolyzates  
RL: USES (Uses)  
(blends with tetraalkoxysilane hydrolyzates, binders for zinc-rich paints)  
IT 78-10-4D, Tetraethoxysilane, hydrolyzates 681-84-5D,  
Tetramethoxysilane, hydrolyzates 4766-57-8D, Tetrabutoxysilane,  
hydrolyzates  
RL: USES (Uses)  
(blends with unsatd. hydrocarbon group-contg. trialkoxysilane hydrolyzates, binders for zinc-rich paints)  
RN 93830-52-5D  
RN 2550-04-1D  
RN 2768-02-7D  
RN 78-10-4D  
RN 681-84-5D  
RN 4766-57-8D

L10 ANSWER 2 OF 2 WPIDS COPYRIGHT 1997 DERWENT INFORMATION LTD  
AN 92-102366 [13] WPIDS  
DNC C92-047963  
TI Resin compns. for zinc -rich paint having good top coat adherence -

obtd. by hydrolysing alkyl silicate(s) and tri alkoxy silane(s) in the presence of acid catalyst.

DC A82 G02 4

PA (NIPPA) JAPAN PAINT CO LTD

CYC 1

PI JP 04046932 A 920217 (9213)\* 6 pp <--

ADT JP 04046932 A JP 90-158109 900615

PRAI JP 90-158109 900615

IC C08G077-20; C09D005-10

AB JP04046932 A UPAB: 931006

Compsns. are obtd. by hydrolysing 100 pts. wt. (A) alkyl silicates of formula (I) and/or their condensate mixts. and 5-300 pts. wt. (B) trialkoxysilanes of formula (II) at the same time or separately in the presence of (C) acid catalysts. In formulae, R<sub>1</sub> = 1-5C alkyl gps.; and R<sub>2</sub> = a 2-5C hydrocarbon gp. contg. unsatd. bond.

Paint comprises the resin compsns., Zn dust (average particle dia. 1-20 microns) in amts. of 50-95wt.% of the solid component of coat film (for long term anticorrosive system) and other pigments, solvents and other additives. Liq. component contg. the resin compsns. and powder components constituting Zn-rich paint are stored in separate vessels and mixed immediately before use.

USE/ADVANTAGE - The resin compsns. are used as binders for Zn-rich paint. The paint contg. the compsns. have good film forming properties, heat resistance and forms coatings having good top coat adherence (no lowering of surface tension).

In an example, 100 pts. wt. (by wt.) of tetraethoxysilane and 20 pts. of vinyltrimethoxysilane were dissolved in 122.3 pts. of isopropanol. 21 Pts. of 0.01N HCl were added to the soln.. The mixt. was stirred at 60 deg.C for 3 hrs.. A resin compsn. soln. contg. 15wt.% active component was obtd.. A Zn-rich paint was prep'd. by mixing 80 pts. of the resin compsn. soln., 15 pts. of Zn dust and 5 pts. of clay. A sand-blasted steel sheet was coated with the paint to give a dry layer of 15-20 micron, dried and exposed to the outdoors for 7 days. An adhesive tape was adhered to the coat face and peeled rapidly from it. The coat film did not release.

0/0

FS CPI

FA AB; GI

MC CPI: A08-E02; A12-B01; G02-A03; M13-H05; M14-K

L6 ANSWER 1 OF 1 CA COPYRIGHT 1997 ACS  
AN 113:60569 CA  
TI An examination of the interaction of silanes containing carbon-carbon double bonds with aluminum oxide by inelastic electron tunneling spectroscopy  
AU Comyn, J.; Oxley, D. P.; Pritchard, R. G.; Werrett, C. R.; Kinloch, A. J.  
CS Leicester Polytech., Leicester, UK  
SO Int. J. Adhes. Adhes. (1990), 10(1), 13-18  
CODEN: IJAADK; ISSN: 0143-7496  
DT Journal  
LA English  
CC 37-6 (Plastics Manufacture and Processing)  
AB Inelastic electron tunneling spectra were obtained for some silanes with C=C bonds doped from soln. in acidic aq. alc. and from their vapors. Spectra showed a high level of hydrolysis of the silanes doped from soln., but only partial hydrolysis from vapor doping. Vinyltrichlorosilane is fully hydrolyzed with both methods of doping. A silane contg. a methacrylate group is partially saponified.  
ST silane hydrolysis soln vapor doping; vinyltrichlorosilane hydrolysis soln vapor doping; methacrylate silane sapon. vapor doping; vinylsilane hydrolysis soln vapor doping  
IT Hydrolysis  
(of vinylsilane coupling agents, inelastic electron tunneling spectroscopy in detn. of)  
IT Coupling agents  
(vinylsilane derivs., hydrolysis of, in soln. and vapor doping, inelastic electron tunneling spectroscopy in detn. of)  
IT 75-94-5, Vinyltrichlorosilane 78-08-0, Vinyltriethoxysilane 1067-53-4, Vinyltris(2-methoxyethoxy)silane 2530-85-0, 3-Methacryloxypropyltrimethoxysilane 2768-02-7, Vinyltrimethoxysilane  
RL: USES (Uses)  
(coupling agents, hydrolysis of, in soln. and vapor doping, inelastic electron tunneling spectroscopy in detn. of)  
IT 1344-28-1, Alumina, uses and miscellaneous  
RL: USES (Uses)  
(hydrolysis of vinylsilane coupling agent dopants in, vapor and soln. doping effect on)  
RN 75-94-5  
RN 78-08-0  
RN 1067-53-4  
RN 2530-85-0  
RN 2768-02-7  
RN 1344-28-1

RN 2530-85-0  
RN 2768-02-7  
RN 51826-9  
RN 7429-90

L5 ANSWER 1 OF 1 CA COPYRIGHT 1997 ACS  
AN 117:77437 CA  
TI Monomolecular layers and thin films of silane coupling agents by vapor-phase adsorption on oxidized aluminum  
AU Kurth, Dirk G.; Bein, Thomas  
CS Dep. Chem., Purdue Univ., West Lafayette, IN, 47907, USA  
SO J. Phys. Chem. (1992), 96(16), 6707-12  
CODEN: JPCHAX; ISSN: 0022-3654  
DT Journal  
LA English  
CC 66-5 (Surface Chemistry and Colloids)  
OS CJACS-IMAGE  
AB Thin films of tetraethoxysilane [TEOS], (3-bromopropyl)trimethoxysilane [BPS], trimethoxyvinylsilane [VS], and 3-(trimethoxysilyl)propyl methacrylate [TPM] on oxidized aluminum surfaces were investigated by reflection-absorption FTIR spectroscopy, ellipsometry, contact angle, and quartz crystal microbalance (QCM) measurements. Gravimetric measurements with the QCM can reveal quant. aspects of adsorption and film formation, even for films as thin as monolayers. Adsorption of these silane coupling agents from soln. typically produces multilayer films. Vapor-phase adsorption of TEOS and TPM at room temp. results in monomol. layers. The coupling agents VS and BPS require addnl. heating after the vapor-phase adsorption to initiate the hydrolysis and condensation reactions necessary for the surface attachment, which 1-3 layers. For vapor adsorbed films a packing d. of 4-7 mols. nm<sup>2</sup> was found. The data strongly suggest that the org. moieties in several of these films have a preferential orientation on the surface; they can be viewed as two-dimensional, oligomeric siloxane networks with oriented org. chains. Subsequent heating of TPM films results in structural rearrangements; heating of TEOS results in complete condensation to SiO<sub>2</sub> films.  
ST silane layer coupling agent oxidized aluminum; adsorption vapor silane oxidized aluminum; tetraethoxysilane adsorption oxidized aluminum; bromopropyltrimethoxysilane adsorption oxidized aluminum; triethoxyvinylsilane adsorption oxidized aluminum; trimethoxysilylpropyl methacrylate adsorption oxidized aluminum  
IT Adsorption  
(of silane coupling agents, on oxidized aluminum surface)  
IT Condensation reaction  
(of tetraethoxysilane, adsorbed on oxidized aluminum, on heating)  
IT Surface structure  
(of trimethoxysilylpropyl methacrylate adsorbed on oxidized aluminum)  
IT 7631-86-9P, Silica, preparation  
RL: PREP (Preparation)  
(adsorbed, on oxidized aluminum, from condensation of tetraethoxysilane)  
IT 681-84-5, Tetramethoxysilane 2530-85-0 2768-02-7,  
Trimethoxyvinylsilane 51826-90-5, 3-Bromopropyltrimethoxysilane  
RL: PRP (Properties)  
(adsorption of monolayer or thin film of, on oxidized aluminum surface)  
IT 7429-90-5D, Aluminum, oxidized, properties  
RL: PRP (Properties)  
(adsorption of silane coupling agents on)  
RN 7631-86-9P  
RN 681-84-5

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1/1 - (C) WPI / DERWENT  
AN - 84-298207 ç48!  
AP - JP830060443 830405; JP830060443 830405; çBased on  
J59185779 !  
PR - JP830060443 830405  
TI - Hydrophilic corrosion inhibitor - contg. denatured  
polyvinyl alcohol having silyl gp. and opt. inorganic  
substance  
IW - HYDROPHILIC CORROSION INHIBIT CONTAIN DENATURE  
POLYVINYL ALCOHOL SILYL GROUP OPTION INORGANIC SUBSTANCE  
PA - (KURS ) KURARAY CO LTD  
PN - JP59185779 A 841022 DW8448 007pp  
- JP6035667B B2 940511 DW9417 C23C22/68 006pp  
ORD - 1984-10-22  
IC - C23C22/68 ; C23F7/00  
FS - CPI  
DC - A14 A97 M14  
AB - J59185779 The agent for converting a metal surface into  
a hydrophilic state comprises denatured polyvinyl  
alcohol having a silyl gp. in its molecule and  
optionally inorganic substance. The denatured polyvinyl  
alcohol may be saponified copolymer of vinyl ester and  
an olefinic unsaturated monomer having a silyl gp.  
- The olefinic unsaturated monomer may be vinyl  
alkoxysilane (I), (meth)acrylamide-alkoxysilane (II) or  
saponified polyvinyl ester having terminal silyl gp.  
and obtd. by polymerising vinyl ester in the presence  
of mercaptan having a silyl gp..  
- Where n is 0-4, m is 0-2, R1 is 1-5C alkyl (e.g. methyl  
or ethyl) gp. R2 is 1-40C alkoxy or acyloxy gp.  
(which may have a substituent contg. oxygen), R3 is H  
or methyl, R4 is H or a 1-5C alkyl, R5 is 1-5C alkylene  
or a divalent organic residue having chain C atoms  
bonded to each other through O or N.  
- Alternatively, the denatured polyvinyl alcohol may be  
saponified copolymer of vinyl ester, an olefinic  
unsaturated monomer having a silyl gp. in its molecule  
and an olefinic unsaturated monomer having anionic  
hydrophilic group, e.g. a carboxyl, sulphonic, amino or  
ammonium gp. in its molecule.  
- USE/ADVANTAGE - The agent is useful for improving the  
wettability of the metal surface of an air conditioner  
to suppress or inhibit formation of water drops on said  
surface. The agent does not loose its adhesiveness to  
the metal surface, even when the metal surface is damp.  
Hence, ventilating resistance between the fins of the  
air conditioner is not raised during operation. In  
addition, the agent is effective in corrosion  
prevention.(0/0)

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1/1 - (C) WPI / DERWENT  
AN - 96-073545 508!  
AP - JP940126395 940608  
PR - JP940126395 940608  
TI - Resin moulded prod. having metal insert - is mfd. by precoating metal surface with alkoxy:silane cpd. before insert moulding, and gives high bonding strength  
IW - RESIN MOULD PRODUCT METAL INSERT MANUFACTURE PRECOAT METAL SURFACE ALKOXY SILANE COMPOUND INSERT MOULD HIGH BOND STRENGTH  
PA - (POPL ) POLYPLASTICS KK  
PN - JP7329104 A 951219 DW9608 B29C45/14 005pp  
ORD - 1995-12-19  
IC - B29C45/14 ; B29K101:12 ; B32B15/08 ; C08K5/54 ;  
C08K9/04 ; C08L25:06 ; C08L59:00 ; C08L67:03 ;  
C08L77:00 ; C08L81:02  
FS - CPI;GMPI  
DC - A32 P73  
AB - J07329104 The surface of a metal is previously coated with an alkoxy silane cpd. and a resin is insert-moulded.  
- Also claimed is a metal insert resin moulding part produced by the above method.  
- Pref. the alkoxy silane cpd. is an epoxyalkoxy silane, an aminoalkoxy silane, a vinylalkoxy silane, a mercaptoalkoxy silane, and/or an allylalkoxy silane. The resin is a thermoplastic resin, e.g. a liq. crystal polymer, an aromatic polyester type resin, a polyarylenesulphide resin, a polyamide type resin, a polyacetal type resin, and/or a polystyrene type resin.  
- USE - As resin moulded prods. contg. lead frames.  
- ADVANTAGE - The bonding strength of the metal inert member is high. Conventional corrosion, contamination, and deficient adhesion, caused by the entry of a cleaning agent, are eliminated. The prodn. is inexpensive and efficient.  
- (Dwg. 0/3)

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XP-002065790

1/1 - (C) WPI / DERWENT  
AN - 87-146417 §25!  
AP - JP850223133 851007  
PR - JP850223133 851007  
TI - Encapsulated magnetic ultrafine particles for enzyme carrier etc. - comprises ultrafine metal particles, coupling layer and high mol. coating  
IW - ENCAPSULATE MAGNETIC ULTRAFINE PARTICLE ENZYME CARRY COMPRISE ULTRAFINE METAL PARTICLE COUPLE LAYER HIGH MOLECULAR COATING  
PA - (SHKJ ) SHINGIJUTSU KAIHATSU KK  
PN - JP62083034 A 870416 DW8721 008pp  
- JP1031931B B 890628 DW8929 000op  
ORD - 1987-04-16  
IC - A61K9/50 ; A61K47/00 ; B01J13/02 ; B41M5/12 ; G03G9/08  
FS - CPI;GMPI  
DC - A96 A97 B04 B07 D16 J04 P75 P84  
AB - J62083034 The capsules comprise (1) magnetic ultra-fine particulate as the core; (2) a coupling layer formed by chemical bonding between the surface of the particulate and a binding agent and (3) a high molecular coating formed by polymerisation of a functional gp. of the binding agent with one or more polymerisable monomers.  
- The magnetic ultra-fine particulate is pref. Fe, Co, Ni, magnetite or their magnetic alloy. The binding agent pref. includes vinyl triethoxysilane, vinyl triacetoxy-silane, vinyl bis(beta-methoxyethoxy)silane, vinyl trichloro-silane, gamma-methacryloxy-propyl-trim ethoxy-silane, and trimethoxy-silane. The polymerisable monomer includes methyl acrylate, ethyl acrylate, acrolein, 2-hydroxy-ethyl methacrylate, o-, m- and p-methyl styrene, o-, m-, and p-ethyl styrene, vinyl naphthalene and styrene.  
- USE/ADVANTAGE - For magnetic fluid, magnetic ink, carrier of medical substances, catalyst, enzyme or bacteria, etc. Selective sepn. and recovery of particulate are possible due to its magnetism. Corrosion resistance and environmental resistance are maintained due to enclosure by the polymer film. Other functions besides the magnetic function itself can be obtd. by modifying the polymer surface of the capsule.

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